



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/464,253	12/16/1999	LOUIS CENTOFANTI	16715-0121	7296
23594	7590	12/01/2003	EXAMINER	
JOHN S. PRATT KILPATRICK STOCKTON LLP 1100 PEACHTREE SUITE 2800 ATLANTA, GA 30309			JOHNSON, EDWARD M	
			ART UNIT	PAPER NUMBER
			1754	

DATE MAILED: 12/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AS

Office Action Summary	Application No.		Applicant(s)	
	09/464,253		CENTOFANTI ET AL.	
	Examiner		Art Unit	
	Edward M. Johnson		1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-18,20-23 and 25-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-18,20-23 and 25-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 6-7, 12, 15-16, 18, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Noakes US 4,416,810.

Regarding claims 1, 12, and 22, Noakes '810 discloses a method for encapsulation of radioactive LS waste comprising mixing with activated carbon and NaCl (see column 8, lines 23-35 and 55-60), which would inherently have a shape, cover at least some surface area, and block at least some alpha radiation.

Regarding claims 6-7, 15-16, and 18, Noakes '810 discloses NaCl, which contains a metal.

3. Claims 1, 6-7, 12, 15-16, 18, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Motoki et al US 4,622,176.

Regarding claim 1, 12, and 22, Motoki '176 discloses a method of process liquid radioactive waste comprising mixing with activated carbon (see abstract), which would inherently

Art Unit: 1754

have a shape, cover at least some surface area, and block at least some alpha radiation.

Regarding claims 6-7, 15-16, and 18, Motoki '176 discloses zinc and palladium powder (see abstract), metals.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-2, 4-18, 20-23, and 25-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen 5,551,976 in view of Motoki '176.

Regarding claims 1, 12, 22, and 30, Allen '976 discloses a method for the disposal of radioactive waste (see column 1, lines 12-16) comprising: admixing a polymer (see column 5, lines 14-20) with the waste material to encapsulate the waste within the polymer (see column 4, lines 7-13) wherein the polymer prevents radiation from passing through (see column 4, lines 60-62), further mixing the polymer-waste admixture with a shielding material wherein the polymer-waste mixture is incorporated

Art Unit: 1754

within the shielding material (see abstract and column 2, lines 50-55), and forming the final mixture into solidified, round geometric shapes (which have a high volume per unit surface area compared to thin sheets or rods) to further improve overall performance (see column 3, lines 63-67). Allen also discloses a "comparable solidified waste containing no superplasticizer" (abstract), which would at least suggest the process both with and without superplasticizer.

Allen '976 fails to disclose alpha particles and activated carbon.

Motoki discloses activated carbon (abstract).

It is considered that it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the activated carbon of Motoki in the radioactive disposal process of Allen because Motoki discloses his activated carbon in a method of processing radioactive waste (title) to advantageously combine adsorbing and electrochemical action (see column 2, lines 26-30) to dispose of most problematic radioactive wastes (see column 1, lines 45-49).

It is considered that it would have been obvious to one of ordinary skill in the art at the time the invention was made to prevent alpha particle radiation emissions because Allen '976 discloses the disposal of radioactive waste (see column 1, lines

12-16) wherein the polymer prevents radiation from passing through (see column 4, lines 60-62), which one of ordinary skill would reasonably interpret as all radioactive waste emissions, including alpha particle radiation, rather than all radioactive wastes except alpha particle radiation.

Regarding claims 2, 13 and 23, Allen '976 discloses the radioactive material as radon (see column 9, line 67).

Regarding claims 3, 19, and 24, Allen '976 discloses the polymer selected from mineral oil, charcoal, activated carbon, silicates, sulfur, organic polymers or inorganic polymers (see column 5, lines 14-20; column 6, lines 34-56).

Regarding claims 4, 20, and 25, Allen '976 discloses the polymer added in an amount from about 0.1 to about 30 percent by weight based on the amount of waste material (see column 6, lines 14-33).

Regarding claims 5, 11, 17, 21, and 29, Allen '976 discloses disposal by sealing the polymer/waste material in molded forms, such as blocks stored in landfills (see column 2, lines 2-3).

Regarding claims 6, 7, 15, 16, 26 Allen '976 discloses mixing the polymer and waste material with a shielding material such that the polymer-waste material is incorporated with the

Art Unit: 1754

shielding material, by mixing it with concrete (see abstract and column 2, lines 50-67).

Regarding claims 8 and 27, Allen '976 discloses the amount of shielding material in a ratio from about 2 to 1 (see column 6, lines 24-33; up to about 60 percent concrete).

Regarding claims 9, 10, 14, and 28, Allen '976 discloses a geometric shape with a high volume per unit surface area selected from a substantially spherical or cubic shape to further improve overall performance (see column 3, lines 63-67).

Regarding claim 18, Allen '976 discloses mixing the polymer with the waste material to encapsulate the radioactive material to prevent radiation from passing through (see column 4, lines 7-13 and column 2, lines 57-60).

Allowable Subject Matter

6. The following claim is drafted by the examiner and considered to distinguish patentably over the art of record in this application, the claim presented to applicant for consideration:

A method for preventing alpha particle radiation emissions from being emitted from radioactive material-containing waste material into an environment comprising:

forming a first admixture by admixing with the waste material a polymer selected from the group consisting of mineral

Art Unit: 1754

oil, charcoal, activated carbon, and sulfur, wherein the polymer encapsulates the radioactive material and prevents alpha particle radiation emissions from passing through the polymer;

admixing the first admixture with a shielding material selected from the group consisting of ceramic, enamel, concrete, and metal, wherein the first admixture is incorporated within the second admixture, and

forming the second admixture into a geometric shape selected from the group consisting of a spherical shape and a cubic shape, wherein the radioactive material is radon, the polymer is added in an amount of about 0.1 to about 30 percent by weight based on the amount of waste material, and the ratio of shielding material to polymer-waste material admixture is about 4 to 1.

7. The following is a statement of reasons for the indication of allowable subject matter: Although the various limitations of the invention appear to be independently known or suggested broadly in the prior art when taken in a vacuum, it would not have been obvious to one of ordinary skill in the art at the time the invention was made to prevent alpha particle radiation using the steps of the above claim wherein the radioactive material is radon, the polymer is added in an amount of about 0.1 to about 30 percent by weight based on the amount of waste

material, and the ratio of shielding material to polymer-waste material admixture is about 4 to 1.

Response to Arguments

8. Applicant's arguments filed 11/14/03 have been fully considered but they are not persuasive.

Applicant's arguments with respect to claims 1-2, 4-18, 20-23, and 25-29 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 1754

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward M. Johnson whose telephone number is 703-305-0216. The examiner can normally be reached on M-F 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman can be reached on 703-308-3837. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

EMJ
November 19, 2003


STANLEY S. SILVERMAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700